

67,200-1133  
2002-1359

## CLAIMS

What is claimed is:

1. An apparatus comprising:
  - a process chamber having a chamber wall;
  - a showerhead provided in said process chamber; and
  - a plurality of exterior fasteners extending through said chamber wall and into said showerhead.
2. The apparatus of claim 1 wherein each of said plurality of exterior fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head engages an exterior surface of said chamber wall.
3. The apparatus of claim 1 further comprising a gas mix plate carried by said chamber wall above said showerhead.
4. The apparatus of claim 3 wherein each of said plurality of exterior fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head engages an exterior surface of said chamber wall.

67,200-1133  
2002-1359

5. The apparatus of claim 1 further comprising a confine ring provided in said process chamber beneath said showerhead.

6. The apparatus of claim 5 wherein each of said plurality of exterior fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head engages an exterior surface of said chamber wall.

7. The apparatus of claim 5 further comprising a gas mix plate carried by said chamber wall above said showerhead.

8. The apparatus of claim 7 wherein each of said plurality of exterior fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head engages an exterior surface of said chamber wall.

9. An apparatus comprising:  
a process chamber having a chamber wall;  
a showerhead provided in said process chamber;  
a confine ring provided in said process chamber beneath said showerhead; and

67,200-1133  
2002-1359

a plurality of embedded fasteners extending through said confine ring and said showerhead and into said process chamber, with each of said plurality of embedded fasteners substantially embedded in said confine ring.

10. The apparatus of claim 9 wherein each of said plurality of embedded fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head is substantially flush with said bottom surface of said confine ring.

11. The apparatus of claim 9 wherein said process chamber comprises a gas mix plate carried by said chamber wall above said showerhead and wherein said plurality of embedded fasteners is threaded into said gas mix plate.

12. The apparatus of claim 11 wherein each of said plurality of embedded fasteners comprises a fastener head and a threaded shank extending from said fastener head, and wherein said fastener head is substantially flush with said bottom surface of said confine ring.

67,200-1133  
2002-1359

13. A method of mounting a showerhead in a process chamber having a chamber wall defining a chamber interior, comprising the steps of:

extending a plurality of fasteners into engagement with the showerhead and the process chamber; and

structurally isolating said plurality of fasteners from the chamber interior.

14. The method of claim 13 wherein said extending a plurality of fasteners into engagement with the showerhead and the process chamber comprises the step of extending a plurality of exterior fasteners inwardly through the chamber wall and into the showerhead.

15. The method of claim 13 wherein each of said plurality of fasteners comprises a fastener head and a threaded shank extending from said fastener head.

67,200-1133  
2002-1359

16. The method of claim 15 wherein said extending a plurality of fasteners into engagement with the showerhead and the process chamber comprises the step of extending a plurality of exterior fasteners inwardly through the chamber wall and into the showerhead.

17. The method of claim 13 wherein said extending a plurality of fasteners into engagement with the showerhead and the process chamber comprises the step of extending a plurality of embedded fasteners through the showerhead and threading said plurality of embedded fasteners into the process chamber.

18. The method of claim 17 wherein each of said plurality of fasteners comprises a fastener head and a threaded shank extending from said fastener head.

19. The method of claim 14 wherein said structurally isolating said plurality of fasteners from the chamber interior comprises the step of abutting the showerhead against the chamber wall.

67,200-1133  
2002-1359

20. The method of claim 17 wherein said structurally isolating said plurality of fasteners from the chamber interior comprises the step of embedding said plurality of embedded fasteners in a confine ring disposed in the chamber interior beneath the showerhead.